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### **I feel good, therefore I am real: Testing the causal influence of mood on state authenticity**

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I Feel Good, Therefore I Am Real:

Testing the Causal Influence of Mood on State Authenticity

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### Abstract

Although the literature has focused on individual differences in authenticity, recent findings suggest that authenticity is sensitive to context; that is, it is also a state. We extended this perspective by examining whether incidental affect influences authenticity. In three experiments, participants felt more authentic when in a relatively positive than negative mood. The causal role of affect in authenticity was consistent across a diverse set of mood inductions, including explicit (Experiments 1 and 3) and implicit (Experiment 2) methods. The link between incidental affect and state authenticity was not moderated by ability to down-regulate negative affect (Experiments 1 and 3) nor was it explained by negative mood increasing private self-consciousness or decreasing access to the self system (Experiment 3). The results indicate that mood is used as information to assess one's sense of authenticity.

*Keywords:* authenticity, self, mood, personality systems interaction theory, affect infusion model, mood as information.

*I Feel Good, Therefore I Am Real:**Testing the Causal Influence of Mood on State Authenticity*

Authenticity—the sense or belief that one is ‘real’ or ‘true’—is a central construct in the field of positive psychology (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000), as it is thought to confer a variety of psychological benefits (Rogers, 1961; Wood, Linley, Maltby, Baliousis, & Joseph, 2008). Indeed, authentic individuals possess greater self-esteem and positive affect, lesser negative affect (Goldman & Kernis, 2002; Ito & Kodama, 2007; Stephan, Sedikides, & Wildschut, 2012), and higher subjective well-being and lower stress (Wood et al., 2008). Clearly, authenticity is associated with a positive affect profile (Lenton, Bruder, Slabu, & Sedikides, 2012).

The vast majority of published work views authenticity from a trait perspective. That is, authenticity is typically conceptualized as a stable individual difference, such that some persons are consistently more authentic than others (Goldman & Kernis, 2002; Ito & Kodama, 2005; Kernis & Goldman, 2006; Wood et al., 2008). Supporting this view, variability in dispositional authenticity is in part predicted by variability in the Big Five (especially extraversion, agreeableness, and [inversely] neuroticism; Wood et al., 2008). As a consequence of the dispositional perspective’s dominance in the literature, the relation between affect and authenticity has been investigated from a correlational perspective only, with these correlations typically interpreted so that affect is viewed as an outcome of, rather than as input to, authenticity.

The aim of the present research was to test directly the converse proposition: that affect can be an input to authenticity. In particular, across three experiments, we investigated the influence of incidental affect or mood<sup>1</sup> on the sense of authenticity. Incidental (vs. integral) affect is generated independently of—and typically prior to—the key judgment or decision (e.g., a sunny day increasing helping behavior relative to a rainy day; Bodenhausen, 1993; Schwarz & Clore, 1983). Can incidental affect influence when people have the

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<sup>1</sup> As we are primarily concerned with the valence dimension (negative vs. positive), we use the terms *affect* and *mood* interchangeably.

subjective experience of being their real self? If so, why? The answers to these questions have implications for the field's understanding of authenticity's meaning and attainment.

### **Affect and the Self**

Researchers have not, of course, ignored the role of incidental affect in the self in general. For example, variability in mood influences self-focused attention: Negative states such as sadness increase self-focused attention, whereas positive states such as happiness decrease it (Green, Sedikides, Saltzberg, Wood, & Forzano, 2003; Sedikides, 1992a). Furthermore, mood momentarily changes the structure of the accessible self-concept. Compared to those in a neutral mood, participants in a happy or sad mood use fewer dimensions to describe themselves (DeSteno & Salovey, 1997).

Transient mood also influences the available content – and, thus, valence – of the self-concept, most often in a mood-congruent manner (Sedikides, 1992b, 1994). That is, positive moods tend to increase the accessibility of favorable self-relevant information, whereas negative moods tend to increase the accessibility of unfavorable self-relevant information. Most explanations of this mood-self congruency effect view it through one of two lenses: (a) cognitive—such that the accessibility of valenced information guides subsequent attention and knowledge retrieval, or (b) motivational—such that people are motivated to maintain their mood and, thus, attend to mood-congruent information (Sedikides, 1992b).

Mood-self congruency is not always observed, however. Congruency between a transient mood and a person's self-concept is less likely for central (vs. peripheral) aspects (Sedikides, 1995). Central self-aspects are more certain, strongly valenced, elaborated, consolidated, diagnostic and, critically for our aims, more likely to be perceived as representing the true self (Sedikides, 1993, 1995). Based on the Affect Infusion Model (AIM; Forgas, 1995), Sedikides (1995) argued that mood is less likely to influence judgments regarding central aspects of the self-concept, because these judgments are made using motivated processing (i.e., processing aimed at the achievement of a pre-existing goal) or by directly accessing relevant stored information. In contrast, judgments concerning peripheral self aspects are made in the moment using either heuristic or substantive (i.e., transformative rather than reproductive) processing. According to the AIM, only heuristic and substantive

processing allow for affect to infuse the judgment (Forgas, 1995), hence the apparent resistance of central self aspects to mood manipulations (Sedikides, 1995). This same research (Sedikides, 1995) further suggests that mood influences peripheral self-aspects via affective priming (i.e., whereby similarly-valenced information in memory becomes accessible) rather than via an affect-as-information (i.e., heuristic-inferential; Schwarz & Clore, 1988; Slovic, Finucane, Peters, & MacGregor, 2002) mechanism.

The above-described findings imply that the true (core) self is impervious to irrelevant influence—at least irrelevant affective influence. However, all of that research takes a relatively cognitive view of the self. That is, the experiments assessed the self with respect to cognitive associations, cognitive structure, or attention. It thus remains unclear what the relation is between incidental affect and the subjective or phenomenological self.

### **Affect and Authenticity**

Although theorizing about authenticity extends as far back as the Greek philosophers (Harter, 2002), and the seeds of interest in this concept were sown in psychology's earliest days (Vannini & Franzese, 2008), it is in the past few years that researchers have begun to investigate authenticity as a state (i.e., a situational phenomenon; Fleeson & Wilt, 2010; Gino, Norton, & Ariely, 2010; Heppner, et al., 2008; Lenton et al., 2012; Schlegel, Hicks, Arndt, & King, 2009). Accordingly, understanding of the precursors, functions, and consequences of this state is limited.

In the investigations that have assessed the subjective (felt) experience of authenticity, participants have been asked to explicitly rate the extent to which they: *experience this aspect of myself as an authentic part of who I am* (p. 1383; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), *feel alienated from myself* (Gino et al., 2010, p. 7), or are *in touch with my 'true self'* (Heppner et al., 2008, p. 1141). Evidence suggests that this subjective sense of authenticity is associated with participants' affect. For example, Heppner et al.'s (2008) study showed that daily variation in felt authenticity was correlated with more positive and less negative affect. Also, Sheldon and colleagues (1997) reported that the more authentic a participant felt in a role (e.g., student, friend), the more satisfied she or he was in that role.

Additionally, Turner and Billings (1991) examined personal descriptions of authenticity and inauthenticity experiences and found that true-self situations possess a more positive emotional ambience than false-self situations. Rice and Pasupathi (2010) obtained similar findings: Self-consistent events comprised more positive than negative emotions (at least for older adults), whereas self-discrepant events comprised more negative than positive emotions. Lenton et al.'s (2012) examination of authentic and inauthentic narrative descriptions corroborated the associations between authenticity and positive affect and between inauthenticity and negative affect. Lenton et al. further demonstrated that discrete positive emotions such as contentment, relaxation, and enthusiasm are related to authenticity, whereas negative emotions such as anxiety, sadness, and disappointment are related to inauthenticity. These findings, however, are all correlational. As such, they cannot inform researchers whether affect is a precursor to or an outcome of felt authenticity.

Yet, let us imagine that these had been experimental studies demonstrating that incidental affect influenced the subjective sense of authenticity: Why would that be so? From the perspective of the AIM (Forgas, 1995), such a finding would imply that judgments concerning the self's authenticity are made in the moment ('online') using either heuristic or substantive processing. Online judgments are vulnerable to affect infusion. Positive affect would yield increased authenticity and negative affect would yield increased inauthenticity (relative to neutral affect), because individuals use their mood to infer their authenticity (e.g., "I feel good, therefore I must be integrated and organized"; that is, affect is used as information; Schwarz & Strack, 1999) or because mood renders different information accessible (e.g., "I feel good, which makes me recall more positive, authenticity-consistent information about myself").

Research indicates that self-concept formation is indeed largely an online – rather than a memory-based – process, but only when the individual expects to behave consistently across time (McConnell, Rydell, & Leibold, 2002). This research further indicates that, in general, people do expect behavioral consistency in themselves. Thus, it follows that judgments concerning the self typically will be made online. Additionally, we assume that judging one's current authenticity is similar to judging one's general life satisfaction, in that

both are complex judgments relying on the integration of numerous, ill-defined attributes (Schwarz & Strack, 1999). Complex judgments tend to be constructed “on the fly” rather than be retrieved (Forgas, 1995). If the assessment of one's own authenticity is indeed abstract, then incidental affect is likely to infuse that assessment, perhaps via the “how do I feel about it” heuristic (Schwarz & Clore, 1988; Slovic et al., 2002) or the retrieval of mood-congruent information (Forgas, 1995).

Personality systems interaction (PSI) theory (Kuhl, 2000) also suggests that affect will influence the sense of authenticity, but for different reasons than the AIM. According to PSI theory, the self is a parallel-processing system that acts on “extended networks of cognitive-affective representations of autobiographical experiences, motives, and emotional preferences” (Koole & Kuhl, 2003, p. 44). Furthermore, the self-system is believed to be integral to the regulation of positive and negative affect, such that this system becomes inhibited in threatening situations (i.e., in the presence of negative affect), but activated when negative affect is down-regulated or positive affect is maintained (Koole & Kuhl, 2003). That is, negative affect leads to reduced, and positive affect to maintained (if not increased), access to the self-system. Cognitive access to the self is, therefore, thought to facilitate authentic functioning, as judgments and behavioral tendencies will be grounded in (mostly implicit) knowledge of prior experiences and goals. It is not known, however, whether access to the self-system translates into the conscious experience of authenticity. Still, based on the theorizing and findings related to both the AIM and PSI theory, we expect incidental affect to influence state authenticity.

### Overview

In three experiments, we examined whether incidental affect – induced in a variety of ways – influences the sense of authenticity. Affect has been shown to be an outcome of authenticity, but it remains to be seen whether the reverse holds true. We also wanted to assess whether affect's impact on authenticity (if observed) could be better explained by the AIM (i.e., affect infuses self-assessed authenticity through the affect-as-information effect or through affective priming) or by PSI theory (i.e., affect impacts self-assessed authenticity by moderating access to the self system). The findings have both theoretical and applied



implications. With respect to the former, they add to the growing body of research identifying the causes – not just outcomes – of felt authenticity. With respect to the latter, given that psychotherapists seek to cultivate authenticity among their clients (Corey, 2009; Rogers, 1961), it is important to determine how people attain it, who can attain it, how people recognize it in themselves, and what its beneficial functions are.

## EXPERIMENT 1

We used movie clips to induce differential affect among participants (happy, neutral, sad; Rottenberg, Ray, & Gross, 2007). In addition to providing a first test of the causal role of mood in authenticity, the current experiment provided a test of PSI theory (Kuhl, 2000), which postulates that positive and negative affect modulate activation of the self system. That is, an increase in positive affect fosters a holistic processing mode, which yields greater access to the self system. In contrast, an increase in negative affect fosters an analytic processing mode, which reduces access to the self system. Such access is believed to facilitate authenticity (Kuhl & Koole, 2003). Individual differences in the ability to maintain positive affect and down-regulate negative affect may, thus, potentially moderate the effect of situational mood on felt authenticity. To address this proposal, we administered a measure of subjective happiness, as this construct represents a chronic ability to maintain positive and down-regulate negative affect (Lyubomirsky, 2001; Lyubomirsky & Lepper, 1999). For example, according to the construal theory of happiness, some people are happier than others because they possess cognitions and motivations – such as positive illusions, adaptive social comparisons, avoidance of negative self-rumination – that serve to maintain ongoing happiness and regulate transient affect (Lyubomirsky). Support for PSI theory would be evidenced by finding that negative mood contributes to a diminished sense of authenticity, but only for those who are less adept at down regulating negative affect (i.e., those low in general happiness). That is, an interaction between the subjective happiness measure and the mood manipulation would lend support to this aspect of PSI theory.

## Method

### Participants

We tested 120 University of Edinburgh students who took part for either course credit or payment. We excluded the responses of eight participants, because they completed the measures in the wrong order (two due to a survey stapling error, six due to not following instructions). The final sample consisted of 112 participants, 89 of whom were women and 23 men, ranging in age from 18 to 31 years ( $M = 20.23$ ,  $SD = 2.12$ ).

### Materials and Procedure

Participants were advised that they would take part in two separate studies. The first involved watching a video and answering questions about it, and the second involved a short survey of their “attitudes and beliefs.” The experimenter explained the sequence of events that the participant (one at a time) was to undertake and then showed the participant to a chair in a cubicle containing a desk and computer. Next, the participant responded to the four-item Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). This scale assesses subjective feelings of global happiness with one’s life (e.g., “Compared to most of my peers I consider myself to be happy”; 1 = *strongly disagree*, 7 = *strongly agree*) and served to measure dispositional mood. The SHS was internally consistent ( $\alpha = .86$ ). This survey also contained demographic items (gender, age). Between being seated in the cubicle and completing the dependent measures participants had no contact with the experimenter, in order to minimize potential interference with the mood manipulation.

When they finished responding to the SHS, participants put on headphones and pressed *play* on the computer’s media player. The computer had been set up to show one of three videos, each of which was intended to induce a distinct mood: (a) Control—a sequence of film depicting sea life from Part 1 of the BBC’s documentary series *Deep Blue* (duration = 9 min 3 sec); (b) Sad—an edited series of heart-rending clips from television (*Friends*) and film (*The Champ*, *The Lion King*, *My Girl*; duration = 12 min 21 sec); or (c) Happy—an edited series of humorous clips from television (*Friends*, *Whose Line is it Anyway?*), film (*Ice Age*, *Love Actually*), and the Internet (panda sneezing, laughing baby; duration = 7 min 30 sec). Some of these clips (*The Champ*, *The Lion King*) have been shown to be effective in evoking the intended mood in previous research (Rottenberg et al., 2007). We used the underwater documentary sequence as our control film based on the proposal that control conditions

should relax and hold participants' attention (Rottenberg et al., 2007). We selected the happy clips for their similarity with the sad induction (animation format, *Friends*) and for their high obtained frequency when searching for "funny/iest" and "happy/iest" clips on the Internet.

After watching the assigned video, participants proceeded to "Survey 1," the post-film questionnaire, in which the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was embedded (among other items); the PANAS served as our manipulation check. Participants indicated (1 = *not at all/none*, 9 = *extremely/a great deal*) the extent to which they experienced each of 10 positive affective states (e.g., enthusiastic, excited) and each of 10 negative affective states (e.g., upset, distressed) while watching the film sequence. Both the positive affect (PA) and negative affect (NA) scales were internally consistent ( $\alpha = .83$  and  $.88$ , respectively) and significantly, albeit weakly, inversely correlated with one another [ $r(110) = -.19, p = .04$ ].

After the post-film questionnaire, participants completed "Survey 2," which contained two measures of state authenticity (order counter-balanced across participants). One was the real-self overlap scale (RSOS), which we developed as a means to assess rapidly the *feeling* that one is being real/authentic (Erickson, 1995; Harter, 2002). That is, we sought to employ a relatively intuitive, global, and phenomenological measure of state authenticity for use in this series of experiments. The RSOS's form was inspired by the Inclusion of the Other in the Self Scale (Aron, Aron, & Smollan, 1992), a single-item, pictorial measure of the extent to which one person feels close to another; different levels of closeness are depicted by varying levels of overlap between two circles (such that no overlap suggests great distance, whereas near-perfect overlap suggests complete immersion). Similarly, the RSOS assesses the extent to which participants – at a particular moment – feel close to their real, true self. The RSOS depicts six pairs of circles, varying in degree of overlap between them. The left-hand circle in each pair represents "who you are right now," whereas the right-hand circle in each pair represents "your real self (i.e., who you *truly* are)." Participants were instructed to indicate which pair of circles "best represents how close you feel at this moment to your *real self*." If participants selected the pair that were furthest apart, they were assigned a score of 1; if they

selected the pair with the greatest overlap, they were assigned a score of 6 (with the other pairs being assigned the ordered scores in between).

The second assessment of state authenticity was an adapted version of Wood et al.'s (2008) 12-item measure of dispositional authenticity. In particular, we adapted the wording of the items to assess momentary – rather than more enduring – beliefs and feelings about the self (e.g., “I feel out of touch with the real me” → “Right now, I feel out of touch with the real me”; 1 = *strongly disagree*, 7 = *strongly agree*). This state version of the authenticity scale was internally consistent ( $\alpha = .85$ ).

Table 1 shows the simple bivariate correlations between the RSOS and the state version of Wood et al.'s (2008) authenticity scale. Of the three Wood et al. (2008) subscales, the RSOS had the strongest (negative) association with *self-alienation*, which is the most feelings-focused of the subscales; but the RSOS and self-alienation were not redundant.

## Results

### Manipulation Check

Within the context of a one-way Analysis of Variance (ANOVA), we examined the effects of two contrasts — sad versus control, control versus happy — on self-reported affect (PA minus NA). The overall (omnibus) main effect of mood condition was significant,  $F(2, 109) = 43.14, p = .001, \eta_p^2 = .44$ . Tests showed, however, that only the contrast comparing the sad ( $M = .19, SE = .25$ ) and control ( $M = 2.88, SE = .25$ ) conditions was significant,  $z = 6.38, p = .001, d = 1.78$ .<sup>2</sup> The control and happy ( $M = 3.17, SE = .24$ ) conditions did not differ,  $z = 1.25, p = .211, d = .19$ . In other words, the manipulation successfully evoked a relatively negative mood, but not a relatively positive mood.

### Hypothesis Testing

In light of the manipulation check results, we tested our hypothesis using the following contrasts, expecting only the first to reveal a significant effect of mood on state authenticity: (a) sad versus others; (b) control versus happy.

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<sup>2</sup> The statistical notation  $\eta_p^2$  refers to partial eta-squared and  $d$  refers to Cohen's  $d$ , both of which are indicators of effect size.

**State authenticity.** First we examined the effect of the mood manipulation on the real-self overlap scale (RSOS) using a one-way ANOVA with the *a priori* contrasts defined as just described. The omnibus effect of mood on this measure was significant,  $F(2, 109) = 6.57, p = .002, \eta_p^2 = .11$ . As anticipated, the contrast comparing the sad ( $M = 3.81, SE = .18$ ) with the other ( $M = 4.53, SE = .19$ ) conditions was significant ( $z = 3.27, p = .001, d = .64$ ), whereas the contrast comparing the control ( $M = 4.36, SE = .18$ ) and the happy ( $M = 4.69, SE = .17$ ) conditions was not ( $z = 1.46, p = .144, d = .34$ ). Participants in a sad mood reported significantly less real-self overlap than participants in the happy/control conditions, whereas the authenticity of participants in the control and happy conditions did not differ (as these latter two conditions were not affectively distinct from one another).

Next, we examined the effect of the mood manipulation on the state version of Wood et al.'s (2008) authenticity scale. Accordingly, we conducted a mixed-model ANOVA with mood condition as the between-subjects factor (using the same *a priori* contrasts) and the three subscales of the adapted Wood et al. (2008) measure as a within-subjects variable. The omnibus effect of mood was nonsignificant,  $F(2, 109) = .78, p = .463, \eta_p^2 = .01$ . Accordingly, neither contrast was a significant predictor of overall state authenticity: (a) sad ( $M = 4.79, SE = .15$ ) versus others ( $M = 4.99, SE = .08$ ),  $z = 1.25, p = .211, d = .24$ ; (b) control ( $M = 5.01, SE = .13$ ) versus happy ( $M = 4.97, SE = .11$ ),  $z = -.234, p = .815, d = -.06$ . Further, the (nonsignificant) omnibus effect of mood did not depend on subscale,  $F(2, 218) = 1.04, p = .385, \eta_p^2 = .02$ . Mood had no reliable effect on this measure of state authenticity.

**Moderation.** To examine whether the mood-authenticity relation depended on whether participants were relatively happy versus sad in the first place (i.e., individual differences in mood-regulation abilities), we re-ran the analyses of mood condition's effects on the two measures of state authenticity, but now with SHS (standardized) included as a potential moderator. For both the RSOS and the state version of Wood et al.'s (2008) authenticity scale, interactions between mood condition (omnibus) and the SHS were nonsignificant: (a) condition  $\times$  SHS for the RSOS,  $F(2, 96) = 1.62, p = .204, \eta^2 = .03$ ; (b) condition  $\times$  SHS for

the overall adapted authenticity scale:  $F(2, 96) = .04, p = .957, \eta_p^2 = .001$ ; (c) condition  $\times$  SHS  $\times$  authenticity subscale,  $F(4, 192) = 1.81, p = .128, \eta_p^2 = .04$ .

### Summary

Mood influenced participants' sense of authenticity, such that those in a sad mood felt less authentic than those in the happy and control conditions—at least when state authenticity was measured with a global-affective scale. Perhaps mood had no effect on the state version of the Wood et al. (2008) authenticity scale, because it was a more domain-specific assessment of authenticity than the RSOS. For example, mood is more likely to infuse global judgments of life satisfaction (i.e., life in general) than domain-specific judgments of life satisfaction (e.g., job satisfaction), because the latter are less cognitively demanding (Schwarz & Strack, 1999; our Experiment 3 contained both dependent measures, allowing us to assess this hypothesis further). There was no evidence that dispositional mood moderated the effect of a temporary mood on state authenticity as predicted by PSI theory.

## EXPERIMENT 2

To assess whether mood can impact state authenticity more implicitly, we used the facial feedback paradigm (Strack, Martin, & Stepper, 1988) to manipulate affective state (happy, neutral/control, or sad). We then provided participants with a measure of authenticity embedded within a set of other tasks. The facial feedback hypothesis suggests that arranging the musculature of the face so that it generates a facial expression of emotion will automatically and unconsciously evoke the corresponding affective state (Dimberg, 1988; Lundqvist & Dimberg, 1995). Accordingly, we expected that participants who unknowingly produced a smile (i.e., happiness) would increase their sense of authenticity, whereas participants who unknowingly produced a frown (i.e., sadness) would decrease their sense of authenticity (compared to those producing a relatively neutral expression). Using an implicit mood manipulation enabled us to test the automaticity of potential influences of affect on authenticity, thus ruling out alternative explanations concerning social desirability or experimental demand. This mood manipulation also does not suffer from Experiment 1's methodological limitation (i.e., the differential duration of the videos used to manipulate mood may have contributed to the ineffective induction of relative happiness). Finally, the

implicit manipulation of mood also allowed us to assess the potential boundaries of the effect. Perhaps explicit recognition that one's mood has changed is necessary in order to infer something about one's authenticity.

## **Method**

### **Participants**

As part of a class project, University of Edinburgh psychology undergraduate students recruited 411 volunteer participants for our experiment. Of these, we excluded the responses of 22 participants: eight because they reported being less than 18 years of age (contrary to our recruitment instructions), 13 because they expressed suspicion about the cover story, and one because s/he omitted the survey's last page. Of the final 389 participants, 155 were women and 234 were men, ranging in age between 18 and 74 years ( $M = 23.95$ ,  $SD = 10.43$ ).

### **Materials and Procedure**

The experimenter informed participants (one at a time) that this experiment examines how psycho-motor coordination impacts physically-impaired performance and, thus, it tests the ability to manipulate objects simultaneously with different parts of the body (Strack et al., 1988). Accordingly, the experimenter instructed participants to hold a pencil (or pen) in their mouth while they performed various tasks. The position in which the pencil was to be held depended on condition: happy, neutral/control, or sad. Participants in the happy condition were instructed to hold the pencil firmly between their front teeth and to avoid touching it with their lips (producing a smile). Participants in the control condition were told to hold the pencil gently between their teeth, with their lips open so as not to touch the pencil (producing a neutral expression). Participants in the sad condition were advised to hold the pencil tightly with their lips, making sure not to allow their teeth to touch it (producing a frown). The experimenter demonstrated the assigned pose and, importantly, did not mention the facial expression that the given technique should induce.

Participants reproduced the demonstrated pencil-holding technique and were directed to hold this pose while they completed a brief survey comprising four tasks ostensibly assessing their motor skills, perceptual skills, and objective and subjective cognition (in order). The motor skills task asked participants to connect five digits by tracing a line. The perceptual

skills task asked participants to rate their perception of Chinese characters (i.e., pleasantness vs. unpleasantness, squaredness vs. roundedness). The objective cognition task contained two analytical GRE questions. Finally, the subjective cognition task included the RSOS (in this and the next experiment, the RSOS depicted seven rather than six pairs of circles), one item assessing current mood (the “pleasure” Self Assessment Manikin, or SAM, which depicts a series of seven expressive figures, from a smiling to a frowning one; Bradley & Lang, 1994), and a third filler item. The pleasure SAM was the manipulation check. At the end of each category (motor skills, perceptual skills, objective cognition, subjective cognition), participants rated the difficulty of completing the given task when holding the pencil in their mouth (1 = *not at all difficult*, 7 = *very difficult*). This question served to reinforce the cover story and allowed us to rule out an alternative explanation for any observed effect of condition on state authenticity; i.e., that the facial expressions differed in how easy they were to hold and that it was this difference, rather than the intended mood, that influenced state authenticity.

We had only one measure of state authenticity (RSOS) in this study, because of practical constraints (i.e., the class project necessitated a study that could be quickly administered by the experimenters). Given the implicit nature of the mood manipulation as well as the findings of Experiment 1, we thought that this more intuitive, global measure of state authenticity would be more likely than the adapted Wood et al. (2008) scale to capture mood-induced variability in authenticity.

For the final page of the survey, participants removed the pencil from their mouth and answered questions assessing their demographic characteristics (gender, age), compliance with the task instructions, and suspicion: (a) Tell us your understanding of the purpose of the study; (b) Were there any aspects of the study that did not make sense to you?

## Results

### Manipulation Check

To test the effect of the manipulation on incidental affect (the pleasure SAM), we again used a one-way ANOVA to compare the sad with the control condition and the happy with the control condition. The omnibus effect of the mood condition was significant,  $F(2, 386) =$



4.29,  $p = .014$ ,  $\eta_p^2 = .02$ . As in Experiment 1, however, the tests of the contrasts showed that the sad condition ( $M = 4.55$ ,  $SE = .13$ ) differed from the control condition ( $M = 4.92$ ,  $SE = .11$ ;  $z = 2.22$ ,  $p = .026$ ,  $d = .28$ ), but the happy condition ( $M = 5.02$ ,  $SE = .13$ ) did not ( $z = .61$ ,  $p = .544$ ,  $d = .08$ ).

### State Authenticity

Because the manipulation successfully induced a relatively negative mood, but not a relatively positive mood, hypothesis-testing again examined two distinct contrasts: (a) sad versus others; (b) happy versus control. We expected only the former contrast to yield an effect on state authenticity.

**Basic model.** The omnibus test of mood condition on the RSOS was marginally significant,  $F(2, 386) = 2.56$ ,  $p = .079$ ,  $\eta_p^2 = .013$ . The planned contrast comparing the sad ( $M = 4.55$ ,  $SE = .13$ ) to the other conditions ( $M = 4.89$ ,  $SE = .09$ ) was significant,  $z = 2.16$ ,  $p = .031$ ,  $d = .28$ . As with the manipulation check, the contrast comparing the control ( $M = 4.95$ ,  $SE = .12$ ) to the happy condition ( $M = 4.83$ ,  $SE = .13$ ) was not significant,  $z = -.66$ ,  $p = .505$ ,  $d = -.08$ . Participants felt less authentic in the sad than the other conditions, but authenticity did not differ between the control and happy conditions (which were not affectively distinct).

**Covariate model.** To test whether condition differences in perceived difficulty of the set of tasks accounted for the effect of sadness on state authenticity, we re-ran the above analysis, but this time controlling for perceived difficulty. We observed the same pattern of results: (a) sad ( $M = 4.57$ ,  $SE = .13$ ) versus others ( $M = 4.88$ ,  $SE = .09$ ),  $z = 1.97$ ,  $p = .049$ ,  $d = .21$ ; (b) control ( $M = 4.90$ ,  $SE = .13$ ) versus happy ( $M = 4.85$ ,  $SE = .13$ ),  $z = -.27$ ,  $p = .786$ ,  $d = -.03$ . Regardless of how difficult they found the assigned facial expression, participants in the sad condition felt less authentic than those in the other conditions, who did not differ from one another.

### Summary

Using a direct manipulation of mood (i.e., video clips), Experiment 1 provided initial evidence that incidental negative affect can influence the sense of authenticity. Using a more subtle, implicit manipulation of mood (i.e., the facial feedback paradigm), Experiment 2 also found that sad participants felt less authentic than control/happy participants.

### EXPERIMENT 3

Experiment 3 had three goals: (a) to replicate the findings of Experiments 1 and 2 using an alternative direct mood manipulation, in the hopes of successfully inducing a positive mood (i.e., music + instruction; Westerman, Spies, Stahl, & Hesse, 1996); (b) to examine directly the viability of the AIM versus PSI explanations for mood's influence on the subjective sense of authenticity; and (c) to rule out another potential alternative explanation for the results.

With respect to the second goal, again, PSI theory (Kuhl, 2000) proposes that the self-system becomes inhibited in threatening situations, whereas it becomes activated (salient) when negative affect is down-regulated or positive affect is maintained. Authenticity is believed by some researchers to depend on (perhaps implicit) self-awareness (Koole & Kuhl, 2003). Thus, the relation between mood and the sense of authenticity may be mediated by access to the self system. That is, perhaps positive mood (versus negative mood) makes the self-concept accessible, in turn leading to an increased sense of authenticity. To test this proposal, Experiment 3 measured true-self accessibility (Bargh, McKenna, & Fitzsimons, 2002; Schlegel et al., 2009) following the mood manipulation.

PSI theory further suggests that individual differences in affect regulation moderate the effects of mood on access to the self system, such that individuals who are adept at down-regulating negative affect may still maintain access to the self system under stressful conditions (Baumann, Kaschel, & Kuhl, 2007; Koole & Kuhl, 2003). To test this possibility, Experiment 3 assessed individual differences in chronic ability to down-regulate negative affect with three different measures: the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999), the Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), and the Emotional Regulation Scale (Gross & John, 2003). Support for this aspect of PSI theory would be shown by an interaction between each measure and the mood manipulation: That is, the mood manipulation should only influence the state authenticity of those who are poor emotion regulators.

In contrast to PSI theory, the AIM (Forgas, 1995) implies that the judgment of one's own authenticity may be vulnerable to affect infusion, because the judgment is made online

using either heuristic or substantive processing. Evidence for a substantive processing (i.e., affective priming) account would be obtained by a mood-congruent bias in self-related information processing. As described previously, past studies have demonstrated that mood influences the available content of the self-concept in a mood-congruent way (Sedikides, 1992a, 1994). That is, positive mood facilitates the retrieval of favorable self-related information, whereas negative mood facilitates the retrieval of unfavorable self-related information. Perhaps this differential accessibility of positive versus negative self-related information contributes to the sense of authenticity or inauthenticity, respectively. Experiment 3 enabled us to test this proposition.

Self-esteem represents a global, valenced evaluation of the self (Brown, Dutton, & Cook, 2001; Sedikides & Gregg, 2003), and it has strong theoretical and empirical links to both affect (Brown & Marshall, 2001; Neiss et al., 2005) and authenticity (Goldman, 2006; Heppner et al., 2008; Wood et al., 2008). As with authenticity, affect is typically viewed as an outcome of, rather than a precursor to, self-esteem (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Sedikides & Alicke, 2012). Also like authenticity, self-esteem has been theorized to serve a signaling function. For example, sociometer theory (Leary, 2006) proposes that self-esteem alerts individuals to real or imagined threats to their social relationships and standing: If self-esteem is low, then the individual is motivated to take action to facilitate approval and inclusion by others. In light of the inter-relatedness of the constructs of interest (affect and authenticity) with self-esteem, it is crucial to rule out the possibility that self-esteem and authenticity are simply different words for the same construct. Accordingly, Experiment 3 included state self-esteem as a potential mediator. If the effect of mood on state authenticity is not completely mediated by self-esteem, we will have demonstrated the discriminant validity of state authenticity from self-esteem.

## **Method**

### **Participants**

Participants were 145 students at the University of Edinburgh who received either course credit or payment. Of these, 113 were women and 32 were men, ranging in age between 18 and 45 years ( $M = 20.75$ ,  $SD = 3.66$ ).

## Materials and Procedure

The recruitment announcement informed potential participants that they would take part in two separate studies. The ostensible first study was an Internet survey focused on how people experience everyday states, whereas the ostensible second study was a lab-based experiment examining how people interpret music.

The online survey assessed the true-self concept and several individual differences that could moderate the effects of mood on state authenticity. We measured the true-self concept with a method developed by Schlegel et al. (2009; see also Vess, Arndt, Routledge, Sedikides, & Wildschut, 2012). This task makes use of a list of 60 personality traits chosen from the normative likeability ratings of Anderson (1968); the list contains equal numbers of positive, neutral, and negative personality traits (e.g., intelligent, cautious, lazy). Participants were asked to select the 10 traits that best expressed their true/real self. In the present experiment, the true/real self was simply described as being “who you *truly* are (which may not necessarily be the same as who you would *like* to be).”

Next, participants responded to items from the SHS ( $\alpha = .88$ ; Lyubomirsky & Lepper, 1999), the trait meta-mood scale (TMMS;  $\alpha = .90$ ; Salovey et al., 1995), and an emotion regulation scale (Gross & John, 2003) assessing reappraisal ( $\alpha = .87$ ) and suppression ( $\alpha = .69$ ), with the scales' items being randomly interspersed with one another in a fixed order and rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Again, the four-item SHS assesses subjective feelings of global happiness with one's life. The TMMS comprises 30-items that assess how individuals reflect upon their moods and manage their feelings or emotions. The scale has three factors: attention to feelings (i.e., the extent to which a person monitors her/his emotions; e.g., “I often think about my feelings”), clarity of feelings (i.e., the ability to discriminate between one's emotions; e.g., “I am usually very clear about my feelings”), and emotional repair (i.e., the ability to maintain pleasant mood and down-regulate unpleasant mood; e.g., “No matter how badly I feel, I try to think about pleasant things”).

The emotion regulation scale (Gross & John, 2003) contains 10 items assessing two orthogonal emotion regulation strategies: reappraisal (e.g., “When I want to feel less negative emotion, I change the way I'm thinking about the situation”) and suppression (e.g., “I control

my emotions by not expressing them”). Table 2 reports the simple correlations among the trait measures. The survey concluded with demographic items (age, gender).

We tested participants one at a time in the second part of the experiment, which took place within two weeks of completing the online survey. Upon arrival for this “music study,” we asked participants to put on headphones so that they could listen to and rate one of three pieces of classical music (randomly assigned) for 7 min. We intended the music selections to induce a happy (Bach’s Brandenburg Concerto no. 3, played by Hubert Law), neutral (Faure’s, ‘Ballade pour Piano and Orchestra,’ opus 19, played at half speed), or sad (Prokofiev’s ‘Russia under the Mongolian Yoke,’ played at half speed) mood. Previous research (Brown & Mankowski, 1993; Jouriles & Thompson, 1993) and pilot testing aided us in the selection of these songs. Additionally, we displayed different visualizations from Windows Media Player™ on each participant’s computer screen to strengthen their assigned mood condition (i.e., “Ambiance: X Marks the Spot” for the happy condition; “Ambiance: Water” for the control condition; “Bars and Waves: Ocean Mist” for the sad condition). We instructed participants to listen carefully to the song and to immerse themselves in the atmosphere and mood expressed in the music; however, the experimenter was careful to make no explicit mention of the intended mood (De l’Etoile, 2002).

After removing their headphones, but while the music continued to play on the speakers, participants completed the ‘Me/Not Me’ computer task, which measured the momentary accessibility of their true-self (Schlegel et al., 2009; Schlegel, Hicks, King, & Arndt, 2011). This task asked participants to decide as quickly and as accurately as possible whether a given trait was self-descriptive or not. Each trial began with a fixation cross in the middle of the screen for two seconds. A one-word personality trait then appeared until a response (“Me” or “Not me”) was made on the response box (participants were asked to place one index finger on each key; left versus right arrangement of the “Me” and “Not Me” keys was counterbalanced across participants). Each response was followed by a one-second pause, after which a new trial commenced. Participants began with a set of nine practice trials followed by the critical trials, comprising of 60 personality traits used to assess the true-self in the previously-completed online survey. Accordingly, the 10 traits that participants had

identified as expressing their ‘true-self’ were also displayed. Faster reaction times to pressing “Me” when the participant’s personal 10 true-self words appeared (vs. “Me” to the other words) reflects greater true-self accessibility (Bargh et al., 2002; Schlegel et al., 2009, 2011).

Following the computer task, we asked participants questions that assessed the effectiveness of the manipulation (i.e., “What is the emotional tone of the song you just listened to?”, “How do you feel now after listening to this piece of music?”); these items were interspersed among other questions related to the music they heard. Participants rated the critical items on 7-point scales with the endpoints anchored by relevant labels (e.g., very negative vs. very positive, and very sad vs. very happy, respectively). We also assessed the mood manipulation with the short-form PANAS (Thompson, 2007); given its (PA *minus* NA) strong correlation with the average of the music-related items ( $r_{145} = .56, p = .001$ ), however, we only report the results of the former below.

Next participants completed in a fixed order: (a) two items from the Rosenberg Self-Esteem Scale (Rosenberg, 1965) that we modified to measure state rather than trait self-esteem (e.g., “At the moment, I believe that I have many positive characteristics”); (b) two items adapted from the private and two items adapted from the public self-consciousness scales (Fenigstein, Scheier, & Buss, 1975; e.g., private: “At the moment, I am conscious of my inner feelings”; public: “At the moment, I feel concerned about what other people think of me”); (c) the real-self overlap scale (RSOS); and (d) the state version of Wood et al.’s (2008) 12-item measure of trait authenticity. The scales had either good internal consistency (positive affect or PA:  $\alpha = .81$ ; negative affect or NA:  $\alpha = .82$ ; overall authenticity inventory:  $\alpha = .86$ ) or, in the case of two-item measures, at least a moderately strong, positive inter-item correlation [self-esteem or SE:  $r(145) = .72, p = .001$ ; private self-consciousness or PriSC:  $r(145) = .51, p = .001$ ; public self-consciousness or PubSC:  $r(145) = .63, p = .001$ ].

Participants also completed demographic items (e.g., age, gender). Note that the music played throughout the entirety of the study.

## Results

### Manipulation Check

The items assessing the song's emotional tone and the participant's mood after the song were highly correlated [ $r(145) = .76, p = .001$ ]; thus, we averaged them to form a mood valence measure. We tested the manipulation of mood in a one-way ANOVA, using the same two a priori contrasts as before: sad versus control, control versus happy. The omnibus effect of the mood manipulation was significant,  $F(2, 142) = 120.43, p = .001, \eta_p^2 = .629$ . The tests showed that both contrasts were significant: Participants in the sad condition ( $M = 3.24, SE = .13$ ) differed from control ( $M = 3.70, SE = .16; z = 2.18, p = .029, d = .47$ ), and participants in the happy condition ( $M = 5.81, SE = .09$ ) also differed from control ( $z = 9.17, p = .001, d = 2.38$ ). The manipulation was therefore effective in inducing a positive as well as a negative mood; note, however, that the manipulation of positive affect was much stronger than the manipulation of negative affect.

### Data Preparation

In line with previous research using the true-self accessibility task (Schlegel et al., 2009; Smith & Henry, 1996), we treated reaction times (RTs) of less than 300 ms as guesses and greater than 5000 ms as non-responses, and we eliminated them from the data (0.2 %). Additionally, we excluded RTs more than 2.5 *SDs* away from the average across all participants (2.6%) in order to control for univariate outliers (Schlegel et al., 2009). Consequently, we conducted statistical analyses involving the true-self accessibility task on 97.2 % of the response-time data. The included RTs were then log-transformed (natural logarithm function) to correct for skewness (Fazio, 1990; Ratcliff, 1993).

To construct the true-self accessibility variable, we averaged across the response latencies to the 10 items identified by each participant in the earlier online survey as representative of their true-self ( $M = 864, SD = 368$ ). We also computed control scores by averaging across response latencies to the items that participants identified in the computerized task as being self-descriptive ('Me') from the remaining 50 traits ( $M = 1036, SD = 507$ ). To improve the quality of the accessibility scores, we then removed individual differences in participants' general response speed by conducting a simple regression predicting the true-self scores from the control scores (Schlegel et al., 2009). We used the

resulting standardized residuals to represent true-self accessibility (Robinson, 2007). Finally, we reversed the residuals so that higher numbers reflect stronger true-self accessibility.

In light of the mood-self congruency findings (Sedikides, 1992a, 1994), we also examined whether self-concept valence accounted for any observed effects of mood on authenticity. Stated otherwise, we wanted to know whether the manipulation changed the content of the self-concept in a mood-congruent way and, if so, whether this change in self-concept content valence could account for the effect of mood on felt authenticity. We thus created a variable representing mood-self congruency by computing the difference between the frequency of positive versus negative traits associated with the self. In particular, we subtracted each participant's number of 'Me' responses to negative traits from their number of 'Me' responses to positive traits in the true-self accessibility task. A resulting positive number reflects more self-concept positivity, whereas a negative number reflects more self-concept negativity.

### Hypothesis Testing

Because the manipulation check in this study revealed that both experimental conditions differed from control, we used the same set of contrasts (sad versus control, control versus happy) to test our hypotheses.

**State Authenticity.** We first examined the effect of the mood manipulation on the real-self overlap scale (RSOS) using a one-way ANOVA. Although the omnibus effect of the mood manipulation was not significant [ $F(2,142) = 2.31, p = .103, \eta^2 = .032$ ], the tests of the a priori contrasts showed that participants in the happy condition ( $M = 5.53, SE = .14$ ) felt marginally more authentic than those in the control condition ( $M = 5.11, SE = .19; z = 1.80, p = .072, d = .36$ ). Participants in the sad ( $M = 5.07, SE = .19$ ) and control conditions did not differ ( $z = .15, p = .885, d = .03$ ).

We next examined the effect of the mood manipulation on the state version of Wood et al.'s (2008) authenticity scale. To do so, we conducted a mixed-model ANOVA with mood condition as the between-subjects factor (using the same a priori contrasts) and the three subscales of the adapted Wood et al. (2008) measure as a within-subjects variable. The omnibus effect of the mood manipulation was significant [ $F(2,142) = 5.30, p = .006, \eta^2 =$



.069]. The contrast comparing the happy ( $M = 5.36$ ,  $SE = .14$ ) to the control condition was significant ( $z = 2.65$ ,  $p = .008$ ,  $d = .54$ ), whereas that comparing the sad ( $M = 4.81$ ,  $SE = .13$ ) to the control condition ( $M = 4.82$ ,  $SE = .15$ ) was non-significant ( $z = .06$ ,  $p = .952$ ,  $d = .01$ ). Participants in the happy mood condition felt more authentic than those in the control condition (who felt no more authentic than those in the sad condition). The effect of condition did not depend further on subscale,  $F(4,284) = 1.32$ ,  $p = .262$ ,  $\eta_p^2 = .018$ .

**Mediation.** To examine whether the effect of mood (happy vs. control) on state authenticity could be explained by any of our potential mediators (i.e., true-self accessibility, mood-self congruency, SE, PriSC, and PubSC), we conducted two bootstrap analyses (Preacher & Hayes, 2008). For both, we set the confidence interval to 95% ( $\alpha = .05$ ) and the sample size to 5000 (Hayes, 2009). Table 2 shows the simple correlations among these potential mediators, as well as between each mediator and both measures of state authenticity. State authenticity as measured by the RSOS was positively related to mood-self congruency and SE, but negatively associated with PubSC. State authenticity as measured by the state version of the Wood et al. (2008) scale was positively related to true-self accessibility, mood-self congruency, and SE, but negatively associated with PubSC.

In the first bootstrap analysis, we entered the RSOS as the dependent variable, the two mood contrasts as the predictors, and the five potential mediators simultaneously into the *Mediate* SPSS macro (Hayes & Preacher, 2011). The indirect effect of mood (happy vs. control) on the RSOS through each of the potential mediators was not significant: (a) true-self concept accessibility:  $a \times b = -.007$ ,  $SE_{a \times b} = .025$ , 95%  $CI = -.064$  to  $.041$ ; (b) mood-self congruency:  $a \times b = .012$ ,  $SE_{a \times b} = .026$ , 95%  $CI = -.04$  to  $.069$ ; (c) SE:  $a \times b = .029$ ,  $SE_{a \times b} = .04$ , 95%  $CI = -.035$  to  $.127$ ; (d) PriSC:  $a \times b = -.007$ ,  $SE_{a \times b} = .04$ , 95%  $CI = -.087$  to  $.078$ ; (e) PubSC:  $a \times b = .039$ ,  $SE_{a \times b} = .035$ , 95%  $CI = -.012$  to  $.120$ .

We next conducted a similar analysis on the state version of Wood et al.'s (2008) authenticity scale (as a unitary measure, given that the effect of mood did not depend on subscale). The indirect effect of mood condition (happy vs. control) on the state version of Wood et al.'s (2008) scale through each of the five potential mediators was not significant: (a) true-self concept accessibility:  $a \times b = .024$ ,  $SE_{a \times b} = .02$ , 95%  $CI = -.004$  to  $.069$ ; (b)

mood-self congruency:  $a \times b = .003$ ,  $SE_{a \times b} = .01$ , 95%  $CI = -.019$  to  $.023$ ; (c) SE:  $a \times b = .05$ ,  $SE_{a \times b} = .06$ , 95%  $CI = -.065$  to  $.175$ ; (d) PriSC:  $a \times b = -.004$ ,  $SE_{a \times b} = .02$ , 95%  $CI = -.049$  to  $.042$ ; (e) PubSC:  $a \times b = .048$ ,  $SE_{a \times b} = .033$ , 95%  $CI = -.002$  to  $.13$ .

**Moderation.** To examine whether the effect of mood on the RSOS was moderated by any of the assessed individual differences (SHS, TMMS, emotional regulation), we entered the mood manipulation, the (standardized) trait measure (one at a time), and their interaction as predictors of this measure. These analyses revealed no significant Trait x Mood interactions, all  $F_s < .980$ ,  $p_s > .378$ ,  $\eta_p^2_s < .014$ . We carried out similar analyses for the state version of Wood et al.'s (2008) authenticity scale. No significant Trait x Mood interactions emerged, all  $F_s < 1.12$ ,  $p_s > .330$ ,  $\eta_p^2_s < .016$ .

### Summary

Situationally-induced mood influenced the sense of authenticity. People in a happy mood reported being more authentic than people in either a neutral or sad mood. None of true-self accessibility, mood-self congruency, state self-esteem, state public self-consciousness, or state private self-consciousness accounted for the effect of mood on state authenticity.

That the effect of mood on authenticity was neither mediated by true-self accessibility nor moderated by any of the individual differences measures lends support to our suggestion following Experiment 1 that PSI theory cannot explain the results. Explicit self-awareness – either public or private – also failed to explain the effect of mood on authenticity. Moreover positive mood did not impact true-self accessibility, as predicted by PSI theory [happy vs. control mood:  $t(142) = 1.52$ ,  $p = .131$ ,  $d = .304$ ; sad vs. control mood:  $t(142) = .052$ ,  $p = .958$ ,  $d = .011$ ].

Furthermore, mood did not influence the accessible self-concept in a mood-congruent manner, as expected by the affective priming account [happy vs. control mood:  $t(142) = .234$ ,  $p = .815$ ,  $d = .049$ ; sad vs. control mood:  $t(142) = -.388$ ,  $p = .699$ ,  $d = .078$ ]. The effect of mood on state authenticity was not mediated by mood-self congruency, suggesting that a mood effect on substantive processing cannot explain the results. Altogether, the findings of Experiment 3 accord with an affect-as-information (Schwarz & Clore, 1988; Slovic et al.,

2002) account of the effect of mood on state authenticity. Put in AIM's terminology (Forgas, 1995), this experiment indicates that the sense of authenticity is evaluated in the moment using heuristic processing.

Experiment 3 also supported the construct validity of the two state authenticity measures. As Table 2 illustrates, state authenticity was correlated in theoretically expected ways with other related-but-distinct constructs, though these correlations were not so high as to suggest that state authenticity is redundant with them. In particular, Experiment 3 demonstrated that self-esteem and state authenticity are independent constructs.

### MINI META-ANALYSIS

Given the variability in the success of some aspects of the mood manipulations and that the two measures of state authenticity yielded different results across the three experiments, we undertook a mini meta-analysis in order to assess the average magnitude of the effect. As Giner-Sorolla (2012) has recently argued, researchers tend to overlook "aesthetically flawed evidence," even when that evidence is otherwise strong; to ameliorate this, he suggests that "reliance on the  $p < .05$  standard, study by study, (should) be replaced by a consideration of evidence across multiple sources of replication" (p. 567).

To that end, we conducted a meta-analysis. This analysis took into account the redundancy between the two dependent variable measures, by averaging across them in Experiments 1 and 3. Table 3 shows two panels of results. The top panel ("All Contrasts") gives the complete set of effect sizes for each of the two contrasts: sad versus control, happy versus control. As seen there, the fixed-effect model, which reflects more accurately the mean overall effect of our studies (Hedges, 1994), indicates that, on average, mood significantly influenced state authenticity in the hypothesized direction. The random-effects model suggests that this relationship is marginal. However, both the fixed-effect and random-effects models in the top panel are likely to be underestimates, given that the mood manipulations were not equally effective across the contrasts in each experiment. That is, in Experiments 1 and 2, only the manipulation of sadness (vs control) was successful and, thus, happiness was not actually induced in those studies; thus, there was no reason to expect that the contrast comparing the happy to the control condition *would* have an effect on state authenticity.

The bottom panel (“Effective Contrasts”), which depicts the results when only those contrasts that successfully induced mood were included (note: in Experiment 3, where both contrasts were successful, these were averaged), shows that the effect sizes associated with both the fixed-effect and random-effects models were significant. Finally, we conducted a regression analysis predicting the size of the mood effect on authenticity (Hedges'  $g$ s from top half of Table 3) from the size of the manipulation's effect on mood (the  $d$ s associated with each contrast across the Experiments). Even for this small sample of six data points, the relationship was significant and sizable,  $F(1, 4) = 8.76, p = .042, R^2 = .69$ . Bigger changes in mood led to bigger changes in felt authenticity.

## GENERAL DISCUSSION

Participants felt more authentic when in a relatively good than bad mood. Notably, this effect occurred even though the manipulated affect was incidental (vs. integral; Bodenhausen, 1993; Schwarz & Clore, 1983) and regardless of whether the manipulation was explicit (Experiments 1 and 3) or implicit (Experiment 2). Additionally, the mood-authenticity relation was not explained by a conceptual confound between state self-esteem and state authenticity, by positive affect rendering the self system more accessible, by causing people to explicitly focus upon themselves (either publicly or privately), or by the manipulation making salient a mood-consistent self-concept (Experiment 3). Furthermore, the effect was not moderated by individual differences in the ability to maintain positive or down-regulate negative affect (Experiments 1 and 3). The mini meta-analysis showed that the average effect of mood on state authenticity across the studies was reliable, especially when taking into account the relative success of the different mood manipulations.

These results indicate that this judgment is made online (in the moment) using heuristic (“how do I feel about it?”), rather than substantive, processing (Forgas, 1995). Specifically, our results suggest that participants used affect as a source of information (Schwarz & Clore, 1988; Slovic et al., 2002) when formulating an assessment of their own authenticity: *I don't feel bad, therefore I must be authentic*. Thus, our findings add to the literature indicating that people may attribute their feelings about one target (e.g., a film, a piece of music) to a different target (e.g., authenticity of the self) via the “how do I feel about

it?” heuristic (Schwarz & Clore, 1983, 1988). These findings should not be taken to mean, however, that the sense of authenticity is solely determined by the whims of daily variability in affect (Kuppens, Oravecz, & Tuerlinckx, 2010). In other words, individuals automatically experience their thoughts and feelings as emanating from the immediate situation, hence the infusion of incidental affect into judgments; but this does not mean that all uses of the “how do I feel about it?” heuristic are necessarily dysfunctional or invalid (Schwartz, 2012).

Reliance on certain feelings may be conducive to behavioral authenticity and, as a result, the sense of authenticity will possess validity. For example, positive affect affords top-down (global, heuristic) processing, which in turn facilitates playfulness, spontaneity, creativity, and a tendency to rely on accessible thoughts and motivations; negative affect, on the other hand, affords bottom-up (local, systematic) processing, which impedes the above outcomes (Clore & Storbeck, 2006; Schwartz, 2012). In other words, positive affect is likely to yield relatively automatic behavior, whereas negative affect is likely to yield relatively regulated, controlled behavior. Authenticity has been defined in numerous ways, but two of the most common tenets are: (a) acting in accord with one’s core beliefs, values, and motivations; and (b) showing these beliefs, values, and motivations to others (Kernis & Goldman, 2006; Wood et al., 2008). All else being equal then, these actions are more likely to follow from a situation involving positive than negative affect. Indeed, Ashton-James, Maddux, Galinsky, and Chartrand (2009) reported that positive affect facilitates the expression of personal values, whereas negative affect facilitates the expression of cultural (socially normative) values.

We believe that integral affect—*affect which arises from the situation itself* (Bodenhausen, 1993)—also plays a central role in the experience of authenticity. In particular, it seems likely that both chronic (i.e., conditioned) and episodic (i.e., immediate) integral affect contribute to this experience (Bodenhausen, Mussweiler, Gabriel, & Moreno, 2000). Our previous research (Lenton et al., 2012) demonstrates that there are common situations that are likely to induce authenticity and inauthenticity. For example, state authenticity is associated with fun, with social contact, with being in familiar surroundings, with having one’s psychological needs met, with high self-esteem, and with the experience of

discrete emotions such as contentment and relaxation. State inauthenticity, in contrast, is associated with failure to meet others' or one's own expectations, with isolation, with feeling judged, with discrete emotions such as anxiety, disappointment, and sadness, and with lesser psychological need satisfaction. Similarly, other studies have found that when people behave in an agreeable, extroverted, conscientious, stable, and open way, they feel more authentic (Fleeson & Wilt, 2010; Sheldon et al., 1997). Thus, situations that give rise to authenticity are also ones that give rise to positive mood (or that inhibit negative mood) and vice versa (Whelan & Zelenski, 2012).

### **Putting it in a Wider Context**

#### **Theoretical Implications**

The findings of Experiment 3 are the first of which we are aware to have investigated the theorized link between incidental affect and access to the self-system. PSI theory contends (Kuhl, 2000) that inducing a positive (vs. neutral or negative) mood makes the true self more accessible. That is, feeling good automatically brings to mind the idiosyncratic attributes participants associated with their true selves. Experiment 3 provided mixed evidence for this contention. On the one hand, the mood manipulation itself did not significantly influence true-self accessibility; at the same time, however, Table 2 shows a positive correlation – albeit a weak one – between positive affect and true-self accessibility.

PSI theory also contends that authenticity depends on access to the self system (Kooze & Kuhl, 2003). Ours was the second investigation into the relation between true-self (or self-system) accessibility and the conscious, subjective experience of authenticity. Schlegel et al. (2009, Study 4) obtained no correlation between true-self accessibility and self-reported authenticity, whereas we obtained a positive correlation, at least for one measure of state authenticity. Thus, our findings lend some credence to the notion that implicit accessibility of the true self can reach awareness, such that individuals can consciously report feeling more authentic. The differences between the methods and materials of these two investigations may account for their discrepant findings. Schlegel et al. examined the accessibility-authenticity relation in its dispositional form (as a trait), whereas we examined it with respect to situational variability (as a state). Also, they assessed authenticity with a 45-item measure that

preceded the accessibility task, whereas we assessed authenticity with a shorter measure that followed the accessibility task. Future empirical efforts should seek to clarify when true-self accessibility enters awareness.

The findings do not support the hypothesized moderating effect of individual differences in the ability to down-regulate negative affect. In Experiments 1 and 3, we assessed this ability using several measures and discovered that it did not alter the impact of incidental mood on state authenticity. According to PSI theory, those who are adept at maintaining positive affect and down-regulating negative affect should not succumb to the influence of negative affect on felt authenticity (Baumann et al., 2007; Koole & Kuhl, 2003); that is, they should be able to resist the attempt to induce a negative mood and, thus, not fall prey to the authenticity-lowering effects of this state. In our experiments, however, participants – no matter their standing with respect to their chronic ability to down-regulate negative affect – were equally likely to feel less authentic under such circumstances. Altogether, our findings indicate that PSI theory may benefit from further investigations of its hypotheses and, perhaps, refinements thereof.

Our results have implications for previous forays into state authenticity, as they suggest an alternative explanation. For example in Gino et al.'s (2010) studies, knowingly wearing fake-brand sunglasses may have increased participants' negative affect and this negative affect, rather than a sense of inauthenticity per se, may have driven their dishonest behavior. Evidence consistent with this suggestion indicates that negative emotions impair self-regulation abilities and, in so doing, increase the propensity to engage in risk-taking behaviors (Leith & Baumeister, 1996). As another example, in their study of the relations among positive and negative affect, need satisfaction, self-esteem, and felt authenticity, Heppner et al. (2008) described authenticity as a predictor of affect rather than the converse. Given the correlational nature of their methods and the findings of our experiments, it seems equally plausible that variability in affect contributed to variability in authenticity. More generally, however, we expect the relation between these constructs to be reciprocal, such that affect influences the sense of authenticity which, in turn, has affective consequences.

### **Additional Considerations**

Firstly, the overall effect of incidental affect on felt authenticity was between .15-.28 (depending on the meta-analytic model), which is traditionally considered 'small' (Cohen, 1988). That being said, one also should consider effect sizes within context (Durlak, 2009). For example, if affect is used heuristically to infer one's authenticity (as an "if-then" proposition), then one might expect the effect size to be rather sizable. Consequently, the small effect size would seem to contradict the heuristic account. If the use of affect as information is, however, depended on the nature of the situation or the judgment target (as many studies show that it is; e.g., Schwarz & Clore, 1983; Schwarz & Strack, 1999), then the average relationship between affect and judgment (in this case, sense of authenticity) may be more graded; that is, mood would be just one piece of information contributing to the judgment, but not the only information (and the use of mood as information will depend further on the individual's cognitive capacity and accuracy motivation; Forgas, 1995). From this point of view, it makes more sense that the effect would be significant, but small.

We also note that both of our measures of state authenticity were explicit: They asked participants to reflect upon their current sense of authenticity. The measures, then, may have compelled participants to consider a subject that they would not have considered otherwise. Thus, the ecological validity of our research could be questioned. Yet, we were specifically interested in the conscious experience of authenticity. For example, those striving to achieve authenticity are likely to use the sense of (in)authenticity to assess whether they have attained their goal and, on the other side of the equation, the sense of (in)authenticity has real-life emotional and behavioral consequences for individuals (e.g., job burnout, unethical behavior; Gino et al., 2010; Wharton, 1999). Also, people are highly motivated to experience the sense of authenticity and avoid that of inauthenticity and, further, most people have experienced both authenticity and inauthenticity (Lenton et al., 2012). These findings demonstrate that the conscious experience of authenticity is relevant and important to people's lives.

As readers will have noted, the results were inconsistent across the two state authenticity measures: In Experiments 1 and 2 the manipulation (sad vs. control) reliably affected the RSOS, whereas in Experiment 3 the manipulation had a significant effect (happy vs. control) on the state version of Wood et al.'s (2008) measure and a marginally significant



effect on the RSOS (Experiment 2 only contained the RSOS). It is unclear why the effects were variable in this way, especially given the moderate correlation between the two measures of state authenticity (Table 1). We suspect, however, that it may have something to do with either the form or effectiveness of the mood manipulation (Westerman et al., 1996) and/or the intuitive/global versus more concrete/focused nature of the two measures (Schwarz & Strack, 1999).

With respect to the former possibility, Lench, Flores, and Bench (2011) observed that some mood inductions (e.g., films, photographs) are more likely than others (e.g., music) to activate specific cognitive content. Activation of such content may be more likely to affect one measure than the other, depending on what that content was. Furthermore, Experiment 3 contained the only successful manipulation of both positive and negative mood; in contrast, Experiments 1-2 successfully induced a sad, but not happy, mood. And of the two experiments using both the RSOS and adapted Wood et al. (2008) measures, in Experiment 1 the manipulation of mood ended before participants began to fill out the dependent variable measures, whereas in Experiment 3 the mood manipulation actually continued (the music played on) while the participants completed the measures of state authenticity.

With respect to the latter possibility, and as described previously, research suggests that global evaluations (such as the RSOS compels) are more likely to be infused with incidental affect than are domain-specific evaluations (such as the state version of the Wood et al. 2008 measure compels), because the former are more complex; leading people to resort to the use of heuristics to solve them (Schwarz & Strack). Given, however, that incidental affect ultimately influenced both measures across the three experiments, we believe that the first account (the form or effectiveness of the particular mood induction employed) is the more likely explanation. Still, future work might seek to distinguish the common and independent correlates of each measure in order to attain a more complete understanding of the aspects of authenticity that each measure assesses. Despite these open questions, the mini meta-analysis showed that, overall, where mood changed, so did the sense of authenticity.

### **Coda**

Incidental affect influences the degree to which individuals feel authentic, such that a relatively positive mood enhances the sense of authenticity and a relatively negative mood detracts from it. This finding is best explained by the heuristic use of mood as informational input to the judgment of one's own authenticity.

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Table 1

*Experiments 1- & 3: Simple Correlations between the Real-Self Overlap Scale (RSOS) and the Adapted Wood et al. (2008) Measure of State Authenticity.*

	RSOS	
	Experiment 1	Experiment 3
Overall Authenticity	.54**	.44**
Authentic Living	.42**	.32**
Accepting External Influence	-.35**	-.22**
Self-alienation	-.53**	-.51**

*Note:* *df* for correlations were 112 (Experiment 1) and 145 (Experiment 3). \*\*  $p < .01$ .

Table 2

*Experiment 3: Simple Correlations Among Measured Variables.*

	1	2	3	4	5	6	7	8	9	10
1 RSOS	-									
2 State Auth	.44**	-								
3 State SE	.30**	.63**	-							
4 State PubSC	-.22**	-.37**	-.24**	-						
5 State PriSC	.004	-.012	.12	.26**	-					
6 TS Accessibility	.14	.36**	.32**	-.16†	-.04	-				
7 Mood-self Congruency	.21*	.19*	.14	-.12	.04	.32**	-			
8 SHS	.26**	.26**	.39**	-.21*	-.02	.19*	.10	-		
9 TMMS	.11	.35**	.30**	-.16†	.09	.26**	.16*	.52**	-	
10 Reappraisal	.10	.13	.21*	-.18*	.19*	.09	-.008	.50**	.37**	-
11 Suppression	-.06	-.21**	-.11	.15†	.006	-.24**	-.07	-.27**	-.53**	-.10

*Note.*  $df = 145$ . TS = True-Self Accessibility; SHS = Subjective Happiness Scale; TMMS = Trait Meta Mood Scale. \*\*  $p < .01$ . \*  $p < .05$ . †  $p < .10$ .

Table 3

*Mini Meta-Analysis Results.*

Experiment Number - Mood Manipulation	Contrast	Measure	Effect size (Hedges' $g$ ) <sup>1</sup>	$SE$ of $g$	$p$ of $g$
ALL CONTRASTS					
1 - Video	Sad vs. Control	RSOS/ Wood (Combined)	.388	.234	.097
1 - Video	Happy vs. Control	RSOS/ Wood (Combined)	.130	.229	.570
2 - Facial Feedback	Sad vs. Control	RSOS	.270	.124	.029
2 - Facial Feedback	Happy vs. Control	RSOS	-.076	.124	.539
3 - Music	Sad vs. Control	RSOS/Wood (Combined)	-.009	.207	.966
3 - Music	Happy vs. Control	RSOS/Wood (Combined)	.449	.201	.026
<i>Fixed Effect</i>			.154	.068	.024
<i>Random Effects</i>			.169	.091	.063
EFFECTIVE CONTRASTS					
1 - Video	Sad vs. Control	Combined RSOS/Wood	.388	.234	.097
2 - Facial Feedback	Sad vs. Control	RSOS	.270	.124	.029
3 - Music	Sad vs. Control/ Happy vs. Control (Combined)	Combined RSOS/Wood	.220	.204	.281
<i>Fixed Effect</i>			.279	.096	.004
<i>Random Effects</i>			.279	.096	.004

<sup>1</sup> This is the sample-size-corrected form of Hedges'  $g$ .